

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:

Hans WETTSTEIN *et al.*

Application No.: **10/808,492**

Filing Date: 25 March 2004

For: Axial-Flow Thermal Turbomachine

Art Unit: 3745

Examiner: Hanan, Devin J.

Attorney Ref. No.: 003-124

**Via EFS-Web**

**AMENDMENT AND RESPONSE UNDER 37 C.F.R. § 1.111**

**Mail Stop AMENDMENT**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

In response to the Office Action dated 7 September 2005, which set a three-month shortened statutory period of response thereto, please amend the above-captioned patent application as follows.

**IN THE SPECIFICATION:**

*Kindly rewrite the following paragraphs of the Specification, as follows:*

**The paragraph appearing at page 1, lines 9-13:**

The invention deals with the field of power plant technology. It relates to an axial-flow thermal turbomachine ~~in accordance with the preamble of patent claim 1~~, which has a reduced rotor weight compared to the known prior art.

**The paragraph appearing at page 4, lines 9-16:**

Accordingly, one ~~object aspect~~ of the invention includes is ~~to avoid avoidance of the~~ abovementioned drawbacks of the prior art. ~~An aspect of the~~ ~~The invention is based on the~~ ~~object of~~ includes developing a thermal turbomachine which is distinguished, on the one hand, by a reduced overall weight of the rotor and in which, on the other hand, brittle blade fracture is prevented, so that the service life of the turbomachine is extended.

**The paragraph appearing at page 4, lines 18-28:**

According to the principles of the present invention, ~~this object is achieved, in the case of a~~ ~~an~~ ~~exemplary~~ thermal turbomachine ~~in accordance with the preamble of patent claim 1~~, ~~by virtue of~~ the fact that at least two blades ~~which~~ are at a uniform distance from one another and are made of a more ductile material, and are arranged in a row of blades between the intermetallic blades, the blades made of the more ductile material either being considerably longer than the intermetallic blades or, if they are of the same length, having a different blade tip shape than the intermetallic blades.

**The paragraph appearing at page 4, line 30 to page 5, line 2:**

~~The advantages~~ Advantages of the invention ~~consist in the fact~~ can include that, firstly, the weight of the rotor is reduced by the use of the blades made of intermetallic compounds, which leads to an increase in the service life of the rotor/blade connection, and, secondly, the brittleness of the intermetallic blades does not entail any increased risk when the turbomachine is operating, since the blades made of the more ductile material arranged in the same row of blades absorb the frictional/wearing forces.

**The paragraph appearing at page 7, line 37 to page 8, line 4:**

The intermetallic compound used to produce the intermediate pieces 4 has the same chemical composition ~~The intermetallic compound used to produce the intermediate pieces 4 has the same chemical composition~~ as the compound which is used for the blades 3 and is described above.

**The paragraph appearing at page 8, line 29 to page 9, line 2:**

Since the rotating components of the high-pressure compressor of a gas turbine installation are subject to high thermal loads at temperatures of up to approx. 600°C, the reduction in the weight of the rotor 1 according to the invention has the advantageous effect of increasing the service life of the turbomachine. The stresses in the blade root fixing in the rotor 1 are reduced.

**The paragraph appearing at page 9, line 32 to page 10, line 5:**

Furthermore, it is conceivable for the invention to be used not only for high-pressure compressor rotors but also for turbine rotors with turbine blades made of known turbine steel, heat-resistant steel or of a superalloy, for example a nickel-based superalloy, in which the intermediate pieces between the rotor blades consist, for example, of an intermetallic  $\gamma$ -titanium ~~e~~onsist, ~~for example,~~ ~~of an intermetallic  $\gamma$  titanium~~ aluminide alloy or an intermetallic orthorhombic titanium aluminide alloy. This too advantageously makes it possible to achieve reductions in weight and an increase in the service life of the turbomachine.

**IN THE CLAIMS:**

*Kindly rewrite Claims 1-9 as follows; please note that no amendments are made at this time:*